

CLAIMS

What is claimed is:

1. A database that is compatible with multiple end-user systems, comprising:  
a data section that includes a plurality of data records; and  
a structure section that includes at least a feature mask, the feature mask including data that indicates whether a particular one of the data records is compatible with one or more of the end-user systems.
  
2. The database of Claim 1, wherein:  
each data record has one or more features associated therewith; and  
the feature mask data indicates whether each feature of a data record is compatible with one or more of the end-user systems.
  
3. The database of Claim 2, wherein:  
each data record includes at least a feature field containing one or more feature bits that represent each of the features associated therewith; and  
the feature mask includes one or more feature mask records, each feature mask record including at least one or more compatibility fields each containing one or more bits that indicate whether a particular one of the data records is compatible with one or more of the end-user systems.
  
4. The database of Claim 1, wherein:  
the data section comprises a plurality of data tables, each data table including a plurality of the data records; and  
the structure section comprises a plurality of features masks, each feature mask at least associated with one of the data tables and including data that indicates whether a particular one of the data records in an associated data table is compatible with one or more of the end-user systems.
  
5. The database of Claim 4, wherein:  
each data record in each data table includes at least a feature field containing one or more feature bits that represent each of the features associated therewith; and

each feature mask includes a plurality of feature mask records, each feature mask record including at least one or more feature mask values that indicate whether a particular one of the data records in the associated data table is compatible with one or more of the end-user systems.

6. The database of Claim 1, wherein the structure section further comprises a system identification table that includes data that uniquely identifies each of the end-user systems.

7. The database of Claim 6, wherein the system identification table comprises a plurality of system identification records, each system identification record associated with each of the end-user systems.

8. The database of Claim 1, wherein:  
the data section comprises a plurality of data tables, each data table including a plurality of the data records; and  
the structure section further comprises a table pointer table that includes data that uniquely describes at least each of the data tables.

9. The database of Claim 8, wherein:  
the table pointer table comprises a plurality of table pointer records; and  
at least one table pointer record is associated with each of the data tables.

10. The database of Claim 9, wherein each table pointer record includes data representative of at least:  
a location of the associated data table;  
a number of the data records in the associated table; and  
a size of each data record in the associated data table.

11. The database of Claim 1, wherein:  
each data record includes one or more fields; and  
the structure section further comprises a field definition table that includes at least data representative of each of the data record fields.

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12. The database of Claim 11, wherein the structure section further comprises one or more return type tables, each return type table including data representative of a format of each of the data record fields.

13. The database of Claim 1, further comprising:  
a header section that includes data representative of indicia that is used to identify the database.

14. The database of Claim 13, wherein the header section further includes data representative of a location of the structure section.

15. A method of generating a database that is compatible with multiple end-user systems, the method comprising the steps of:

generating a data section;  
storing a plurality of data records in the data section; and  
generating a feature mask that includes data that indicates whether a particular one of the stored data records is compatible with one or more of the end-user systems.

16. The method of Claim 15, further comprising:  
associating one or more features with each data record,  
wherein, the feature mask data indicates whether each feature of a data record is compatible with one or more of the end-user systems.

17. The method of Claim 16 further comprising:  
including at least a feature field in each data record;  
supplying each feature field with one or more feature bits that represent each of the features associated therewith;  
including one or more feature mask records in the feature mask; and  
supplying each feature mask record with one or more feature mask values that indicate whether a particular one of the data records is compatible with one or more of the end-user systems.

18. The method of Claim 15, further comprising:
  - dividing the data section into a plurality of data tables that each include a plurality of the data records; and
  - generating a plurality of features masks that are each at least associated with one of the data tables and that each include data indicative of whether a particular one of the data records in an associated data table is compatible with one or more of the end-user systems.
19. The method of Claim 18, further comprising:
  - including at least a feature field in each data record in each data table;
  - supplying each feature field with one or more feature bits that represent each of the features associated therewith; and
  - including one or more feature mask records in the feature mask; and
  - supplying each feature mask record with one or more feature mask values that indicate whether a particular one of the data records in the associated data table is compatible with one or more of the end-user systems.
20. The method of Claim 15, further comprising:
  - generating a system identification table that includes data that uniquely identifies each of the end-user systems.
21. The method of Claim 20, further comprising:
  - including a plurality of system identification records in the system identification table, each system identification record associated with each of the end-user systems.
22. The method of Claim 15, further comprising:
  - dividing the data section into a plurality of data tables that each include a plurality of the data records; and
  - generating a table pointer table that includes data that uniquely describes at least each of the data tables.
23. The method of Claim 22 further comprising:
  - including a plurality of table pointer records in the table pointer table, at least one table pointer record is associated with each of the data tables.

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24. The method of Claim 23, further comprising:  
supplying each table pointer record with data representative of at least (i) a location of the associated data table, (ii) a number of the data records in the associated table and (iii) a size of each data record in the associated data table.
25. The method of Claim 15, further comprising:  
including one or more fields in each data record; and  
generating a field definition table that includes at least data representative of each of the data record fields.
26. The method of Claim 25, further comprising:  
generating one or more return type tables, each return type table including data representative of a format of each of the data record fields.
27. The method of Claim 15, further comprising:  
generating a structure section and including the feature mask therein;  
generating a header section; and  
supplying the header section with data representative of indicia that is used to identify the database.
28. The method of Claim 27, wherein the header section further includes data representative of a location of the structure section.
29. The method of Claim 15, further comprising:  
including at least a feature field in each data record;  
supplying each feature field with data representative of one or more features associated with each data record,  
wherein the feature field of the data record having the requested data is compared with at least a portion of the feature mask to determine whether the requested data is compatible with the end-user system.

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30. A method of storing data to, and retrieving data from, a database that includes at least a data section and a structure section, and that is compatible with multiple end-user systems, the method comprising the steps of:

storing a plurality of data records in the data section;

storing a feature mask in the structure section, the feature mask including data that indicates whether a particular one of the stored data records is compatible with one or more of the end-user systems;

receiving a request to retrieve data from a stored data record and supply the retrieved data to one of the end-user systems;

comparing at least a portion of the data record having the requested data with at least a portion of the feature mask to thereby determine whether the requested data is compatible with the end-user system to be supplied with the requested data.

31. The method of Claim 30, wherein:

one or more features are associated with each data record; and

the feature mask data indicates whether each feature of a data record is compatible with one or more of the end-user systems.

32. The method of Claim 31, wherein each data record includes at least a feature field, and the feature mask includes one or more feature mask records, and wherein the method further comprises:

storing one or more feature bits in each feature field, the feature bits representative of each of the features associated with the data record; and

storing one or more feature mask values in each feature mask record, each feature mask value indicative of whether a particular one of the data records is compatible with one or more of the end-user systems

33. The method of Claim 32, wherein the step of comparing comprises:

comparing the feature bits in the data record with at least the feature mask value.

34. The method of Claim 30, wherein:

the data section is divided into a plurality of data tables that each include a plurality of data records, wherein the method further comprises:

storing a plurality of features masks, each feature mask associated with at least one of the data tables and includes data indicative of whether a particular one of the data records in an associated data table is compatible with one or more of the end-user systems.

35. The method of Claim 34, wherein each data record in each data table includes at least a feature field, and each feature mask includes one or more feature mask records, and wherein the method further comprises:

storing one or more feature bits in each feature field, each feature bit representative of each of the features associated therewith; and

storing one or more feature mask values in each feature mask record, each feature mask value indicative of whether a particular one of the data records in the associated data table is compatible with one or more of the end-user systems.

36. The method of Claim 35, wherein the step of comparing comprises:  
comparing the feature bits in the data record with at least the feature mask value.

37. A computer system, comprising:  
a processor;  
memory in operable communication with the processor; and  
a database stored in the memory, the database compatible with multiple end-user systems and including:  
a data section that includes a plurality of data records, and  
a structure section that includes a feature mask, the feature mask including data that indicates whether a particular one of the data records is compatible with one or more of the end-user systems.

38. The system of Claim 37, wherein:  
each data record has one or more features associated therewith; and  
the feature mask data indicates whether each feature of a data record is compatible with one or more of the end-user systems.

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39. The system of Claim 37, wherein:

each data record includes at least a feature field containing one or more feature bits that represent each of the features associated therewith; and

the feature mask includes one or more feature mask records, each feature mask record including at least one or more compatibility fields each containing one or more bits that indicate whether a particular one of the data records is compatible with one or more of the end-user systems.

40. The system of Claim 37, wherein:

the data section comprises a plurality of data tables, each data table including a plurality of the data records; and

the structure section comprises a plurality of features masks, each feature mask at least associated with one of the data tables and including data that indicates whether a particular one of the data records in an associated data table is compatible with one or more of the end-user systems.

41. The system of Claim 40, wherein:

each data record in each data table includes at least a feature field containing one or more feature bits that represent each of the features associated therewith; and

each feature mask includes a plurality of feature mask records, each feature mask record including at least one or more compatibility fields each containing one or more bits that indicate whether a particular one of the data records in the associated data table is compatible with one or more of the end-user systems.

42. The system of Claim 37, wherein the structure section further comprises a system identification table that includes data that uniquely identifies each of the end-user systems.

43. The system of Claim 42, wherein the system identification table comprises a plurality of system identification records, each system identification record associated with each of the end-user systems.

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44. The system of Claim 37, wherein:  
the data section comprises a plurality of data tables, each data table including a plurality of the data records; and  
the structure section further comprises a table pointer table that includes data that uniquely describes at least each of the data tables.

45. The system of Claim 44, wherein:  
the table pointer table comprises a plurality of table pointer records; and  
at least one table pointer record is associated with each of the data tables.

46. The system of Claim 45, wherein each table pointer record includes data representative of at least:

a location of the associated data table;  
a number of the data records in the associated table; and  
a size of each data record in the associated data table.

47. The database of Claim 37, wherein:  
each data record includes one or more fields; and  
the structure section further comprises a field definition table that includes at least data representative of each of the data record fields.

48. The system of Claim 47, wherein the structure section further comprises one or more return type tables, each return type table including data representative of a format of each of the data record fields.

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49. A flight management system, comprising:

    memory;

    a navigation database stored in the memory, the navigation database compatible with multiple flight management systems and including:

        a data section that includes a plurality of navigational data records, and

        a structure section that includes a feature mask, the feature mask including data that indicates whether a particular one of the navigational data records is compatible with one or more of the flight management systems; and

        a processor configured to generate an aircraft flight plan based at least in part on the navigational data stored in the navigation database.